



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
1 CONGRESS STREET, SUITE 1100 (HBT)
BOSTON, MASSACHUSETTS 02114-2023

October 19, 2006

Orlando Monaco (orlando.monaco@navy.mil)
Dept of the Navy, BRAC PMO Northeast
Code 5090 BPMO NE/LM
4911 South Broad St
Philadelphia, PA 19112-1303

Re: *Site 7 Monitoring Well Installation Work Plan, dated September 5, 2006, Naval Air Station Brunswick, Maine*

Dear Mr. Monaco:

Pursuant to § 6 of the Naval Air Station Brunswick, Maine Federal Facility Agreement dated October 19, 1990, as amended (FFA), the Environmental Protection Agency has reviewed the subject document and comments are below:

General Comment

1. The Work Plan reflects discussion and decisions made the August 8, 2006, technical meeting and the August 11, 2006, conference call. Of particular note is the addition of a source-area well (MW-NASB-772) immediately downgradient of the former caustic pit, and immediately upgradient of historical detections of elevated Cd in groundwater.

Specific Comments

2. **p. 3, Quarterly Gauging:** The revised Work Plan does not address a previous EPA review comment regarding the interpretation of the piezometric surface when data are available from the staff gauge in the ditch. Figures 4 (July 2005), 6 (January 2006), and 7 (April 2006) show a local minimum at the staff gauge, suggesting that groundwater either underflows the ditch at this location, and continues to the east, or "drains" to a deeper domain. As noted in previous review, the interpretation should be consistent with a broader conceptual model. For example, if the ditch is "gaining" from groundwater, the equipotentials should "V" upstream to accommodate this low point. Of course, the available data are too sparse to constrain the interpretation tightly, so some judgment must be imposed. In any event, these adjustments would not significantly affect the interpretation of flow directions in the areas of

concern to the NW, and would not affect the selection of the new monitoring well locations.

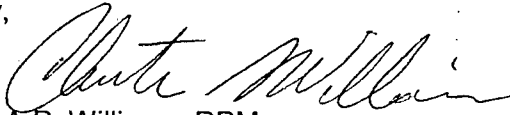
3. **p. 4, Soil Boring and Well Installation:** The revised Work Plan retains the proposal to log the borings based on split spoon samples collected from the ground surface to the water table, apparently rejecting EPA's previous recommendation to log the soils below the water table, as well. Given the relatively thin overburden above the clay, this would entail relatively little additional time and effort, but would provide useful data to support interpretation of monitoring results in the future.
4. **p. 4, Soil Boring and Well Installation:** The revised Work Plan proposes to install 10-foot screens in the new monitoring wells. This choice should be contingent upon verification from the borings that the length is appropriate for the thickness of saturated overburden encountered above the clay. Please be prepared to install a shorter screen (e.g., 5 ft) if indicated by site conditions.
5. **p. 5, Gauging and Groundwater Sampling:** The revised Work Plan proposes to collect a filtered sample if turbidity is >10 NTU and does not stabilize during the purge. This is endorsed, particularly given the importance of metals (Cd) at the site. It is recommended that an unfiltered sample be collected, as well, and that both be analyzed. If the results are to be used at some point in the future to perform a risk evaluation, the unfiltered results will be needed. It is unclear in the paragraph that the filtering only applies to metals; this should be clarified if other parameters are to be collected.

EPA specifies analyses on unfiltered samples because some particulates are indeed mobile in groundwater, particularly under pumping conditions (e.g., in response to a residential water supply well). However, the ambiguity in interpreting results for turbid samples arises because the turbidity can be as much a response to monitoring well construction as it is to "representative" aquifer conditions. A monitoring well that is properly constructed to accommodate a silty aquifer interval (i.e., with a properly chosen well screen slot size and sand pack grain size) can reduce turbidity significantly in unfiltered samples, as can well development, and the purge prior to sampling. To this extent, turbidity is not "natural," but is controllable, and variable depending upon the care taken to control it. These factors make it difficult to establish a self-consistent basis for comparison of background and site data for turbidity-sensitive analytes. Consensus should be sought on the process that is most appropriate given the site conditions and the uses for which the data are intended. In addition while some sampling results across BNAS are high in inorganics, the NTUs reported during sampling are lower than some results where the NTUs are high.

6. **p. 5, Gauging and Groundwater Sampling, ¶ 2:** this paragraph states that the ground water samples will be collected using the EPA's low-flow sampling procedure. However, the water quality stabilization criteria listed does not agree with the stabilization criteria listed in the EPA's low-flow sampling procedure. Change the stabilization criteria so it agrees with the EPA's low-flow stabilization criteria.

If you have any questions with regard to this letter, please contact me at (617) 918-1384.

Sincerely,



Christine A.P. Williams, RPM
Federal Facilities Superfund Section

cc. Claudia Sait/ME DEP (claudia.b.sait@maine.gov)
Charles Porfert, EPA e-mail only (porfert.charlie@epa.gov)
Ed Benedikt/BASCE e-mail only (rbenedik@zwi.net)
Tom Fusco/BACSE e-mail only (tfusco@zwi.net)
Carolyn LePage/LePage Environmental (calepage@adelphia.net)
Peter Golonka/Gannet-Fleming e-mail only (pgolonka@gfnet.com)
Lisa Joy/NASB (lisa.joy@navy.mil)
Darren Gainer/ECC e-mail only (dgainer@ecc.net)
Al Easterday/ECC e-mail only (aeasterday@ecc.net)
Jeff Donovan/ECC e-mail only (JDonovan@ecc.net)